ATN PS-15

NIGHT VISION GOGGLES

ATN PS-15 OPERATOR'S MANUAL (REV. 3, SEPTEMBER 2010)

operator's manual

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SAFETY SUMMARY

CAUTIONS

The ATN PS-15 is a precision optical instrument and must be handled carefully at all times to prevent damage.

- Do not scratch the external lens surfaces or touch them with your fingers.
- Wiping demisting shield with lens paper while wet or with wet lens paper can damage the coating.
- To protect the image intensifier, keep the lens caps on the objective lenses when the goggles are not in use or when checked out in daylight conditions.
- The IR illuminator is a light that is invisible to the unaided eye for use in the conditions of extreme darkness. However, the light from the illuminator can be detected by others when using night vision devices.
- If you use the rubber eyecups for a long period of time, you may suffer skin inflammation. If you develop any symptoms, consult your doctor immediately.

CAUTION:

THIS PRODUCT CONTAINS NATURAL RUBBER LATEX WHICH MAY CAUSE ALLERGIC REACTIONS.

EQUIPMENT LIMITATIONS

To avoid personal injuries and equipment damage which may occur due to improper use of ATN PS15, please, carefully read and understand the following safety precautions.

- The equipment requires some background light (moonlight, starlight, etc.) to operate. The level of performance depends upon the level of light.
- Night light is reduced by passing cloud cover, while operating under trees, in building shadows, etc.
- The equipment is less effective viewing into shadows and other darkened areas.
- The equipment is less effective through rain, fog, sleet, snow or smoke.
- The equipment will not “see” through dense smoke.

TABLE OF CONTENTS

SECTION	TITLE	PAGE
	Safety Summary	a
	Table Of Contents	i
	List of Figures	ii
	List of Tables	iii
	How To Use This Manual	iv
Section I	General Information	1-1
Section II	Equipment Description	2-1
Section III	Mounting Procedures	3-1
Section IV	Operating Procedures	4-1
Section V	Operational Defects	5-1
Section VI	Maintenance	6-1
Appendix A	End Item Components	A-1
Appendix B	Repair Parts List	B-1
	Index	IND-1

LIST OF FIGURES

FIGURE	TITLE	PAGE
1-1	Night Vision goggles	1-2
2-1	ATN PS-15 Kit Components	2-4
2-2	ATN PS-15 Optional Components	2-4
3-1	Attaching ATN PS-15 to Head Mount	3-2
3-2	Attaching ATN PS-15 to Helmet Mount	
3-3	Mounting the Picatinny Adapter to the ATN PS-15	3-4
3-4	ATN PS-15 with IR450	3-4
3-5	Mounting camera to the ATN PS-15	3-5
3-6	Mounting camcorder to the ATN PS-15	3-5
3-7	Mounting 3x Lenses to the ATN PS-15	3-5
3-8	Attaching adapter to ATN PS-15	3-6
3-9	Attaching ATN PS-15 to helmet mount	3-6
3-10	Attaching to ATN PS-15 to PVS head mount	3-6
4-1	CR123A Battery Installation	4-3
4-2	AA Battery Installation	4-4
4-3	Mechanical Functions	4-5
4-4	Infrared (IR) Illuminator Operations	4-6
5-1	Shading	5-2
5-2	Edge Glow	5-3
5-3	Bright Spots and Emission Points	5-4
5-4	Fixed Pattern Noise	5-5
5-5	Chicken Wire	5-6
6-1	Removal and Installation of Browpad	6-12
6-2	Removal and Installation of Chinstrap	6-12
6-3	Removal and Installation of Chin Cup	6-12
6-4	Maintenance/Replacement of the tube in the PS-15	6-13

LIST OF TABLES

TABLE	TITLE	PAGE
2-1	Specification	2-3
2-2	ATN PS-15 Major Components	2-5
4-1	Battery Life	4-2
6-1	Preventive Maintenance Checks and Service for the ATN PS-15	6-2
6-2	Operator Troubleshooting for the ATN PS-15	6-8
A-1	ATN PS-15 End Item Components	A-1
B-1	ATN PS-15 Repair Parts List	B-1

HOW TO USE THIS MANUAL

USAGE

Please make sure you have familiarized yourself with the entire manual before operating the equipment. Read the complete maintenance instructions before performing maintenance and follow all **WARNINGS, CAUTIONS,** and **NOTES.**

MANUAL OVERVIEW

The manual contains sections for Operating and Maintaining the night vision goggles ATN PS-15.

Components of End Item are in **Appendix A**.

Repair Parts List is in **Appendix B.**

SECTION I

GENERAL INFORMATION

FIGURE 1-1. ATN PS-15 – NIGHT VISION GOGGLES

1.1. GENERAL INFORMATION

1.1.1. TYPE OF MANUAL

Operator (Including Repair Parts List).

1.1.2. MODEL NUMBER AND BASIC DESCRIPTION

ATN PS-15 – Multi-Use Night Vision Goggles

1.1.3. SUPPLIER

American Technologies Network Corp.

1341 San Mateo Avenue,

South San Francisco, CA 94080 USA

1.1.4. PURPOSE OF EQUIPMENT

To provide the user with the ability to observe at night under moonlight and starlight conditions. The ATN PS-15 can be handheld, head mounted or helmet mounted to enable walking, surveillance, security, map reading, vehicle maintenance, and administering first aid. The unit allows for horizontal and vertical adjustments when head or helmet mounted and is also equipped with an infrared light-emitting source.

1.2. WARRANTY INFORMATION

This item shall conform to design, manufacturing, and performance requirements and be free from defects in material and workmanship for a period of two (2) years from the date of acceptance. If item is defective, notify ATN or point of purchase contact.

1.3. TECHNICAL INFORMATION

For technical information contact ATN Corp. directly at **(650) 989-5100**, or **info@atncorp.com** or your point of purchase contact.

1.4. LIST OF ABBREVIATIONS

BAT - Battery
Illum - Illuminator
IR - Infrared
mm - Millimeters
NVG's - Night Vision Goggles

SECTION II

EQUIPMENT DESCRIPTION

2.1. SYSTEM DESCRIPTION

The ATN PS-15 is a hand-held, head-mounted or helmetmounted night vision system that enables walking, short-range surveillance, map reading, vehicle maintenance, and administering first aid in both moonlight and starlight. Each unit allows for vertical adjustment (by using head straps), fore-and-aft adjustment, objective lens focus, and eyepiece focus. The device is also equipped with an infrared light-emitting source. Optional 3X Afocal Lenses makes the ATN PS-15 into binocular with enhanced range performance.

PS-15 Night Vision goggles utilize the principle of intensification of the residual light which is reflected from the surrounding objects. The optical system of the goggles consists of: an objective lens, an image intensifier tube and an eyepiece.

Even under unsteady brightness conditions, Automatic Brightness Adjustment System always keeps the IIT brightness level constant.

The Automatic Protective System controls the existing illumination level through the photo receiver. If the illumination level surpasses 100-300 lx for the following 10 seconds, the goggles will shut off automatically. If you move the unit away from the bright/ excessive light the unit will turn back on again. The Automatic Protective System can be switch off for test the unit in the daylight with protective cups on the lens.

Built-in IR Illuminator makes it possible to observe the objects when the goggles work in the conditions of low light or total darkness.

The eyepiece incorporates several LED indicators:

- RED – serves as an IR Illuminator Indicator and an Battery Low Indicator at a time. IR is on when the indicator light becomes stable. If the indicator light starts flickering, it means there might be about 20% of battery charge left.

- GREEN – serves as an Excessive Brightness Indicator. If the bright light remains unchanged for over 10 seconds after the indicator turns on, the goggles will automatically shut-off. The indi-

cator light starts slowly flickering when the Automatic Protective System is off.

The Automatic Shut-off System turn the unit off if the operation control not used more then 60 minutes.

2.2. WEIGHT, DIMENSIONS, AND PERFORMANCE

TABLE 2-1. SPECIFICATION

WEIGHT AND DIMENSION	
Weight (with battery)	700 grams
Length	120 mm
Width	114 mm
Height	69 mm
PERFOMANCE	
Magnification	1X
f-Number	1.2
Field of View	40 degrees
Eyepiece Diopter Adj.	-6 to +2
Eye Relief	25 mm
Focusing range	0.25 m to infinity
Voltage	3.0 VDC or 1.5 VDC
Power Requirements	1 CR123A or 1 AA
IR Illumination Range	3 meters
CONTINUOUS OPERATION	
1 CR123A battery	40 hours (Gen. 2+) 30 hours (Gen. 3 and 4)

2.3. DESCRIPTION OF MAJOR COMPONENTS

FIGURE 2-1. ATN PS-15 KIT COMPONENTS

FIGURE 2-2. ATN PS-15 OPTIONAL COMPONENTS

TABLE 2-2. ATN PS-15 COMPONENTS

ITEM	DESCRIPTION
Kit Components	
1	Night Vision goggles
2	Lens Caps
3	Eye-cups
4	Soft Carrying Case
5	Operator's Manual
6	Battery CR123A Lithium
7	Battery Adapter
8	Headmount Assembly
9	Brow Pads
Optional Components	
1	3X Afocal Lenses (pair)
2	Camera/Camcorder Adapter
3	Demist Shields
4	Sacrificial Windows
5	IR-450 IR illuminator
6	Picatinny Adapter
7	MICH Helmet mount kit
8	Shoulder Strap
9	Universal Helmet Mount
10	PAGST helmet mount kit
11	Hard Shipping/Storage Case

STANDARD KIT COMPONENTS

1. **Night Vision goggles**

   The binocular night vision device with 1x magnification.

2. **Lens Caps**

   The caps used to protect the lenses and to test the unit in daylight.

3. **Eye-cups**

   The rubber cups used to protect eyepiece and for operator's comfort.

4. **Soft Carrying Case**

   A protective bag used to store ATN PS-15 and its accessories.

5. **Operator's Manual**

   Provides equipment description, use of operator controls and preventative maintenance checks and service.

6. **Battery 123A Lithium**

   A single, 123A lithium battery used to power the unit.

7. **Battery Adapter**

   Allows the ATN PS-15 to accept the 123A Lithium battery used to power the unit.

8. **Headmount Assembly**

   Adjustable universal assembly that secures the ATN PS-15 to the operator's head providing hands-free operation.

9. **Brow Pads**

   Changeable pads for secure head mount fit.

OPTIONAL COMPONENTS

1. **3X Afocal Lenses**

   Mountable on the ATN PS15 to enhance range performance. Note: FOV reduction till 13 degrees.

2. **Camera/Camcorder Adapter**

   Mounts onto the ATN PS15 eyepiece to connect a camera/ camcorder for night vision photography/filming purposes.

3. **Demist Shields**

   Used to prevent eyepiece lenses from becoming fogging.

4. **Sacrificial Windows**

   Replaceable windows supplied to protect the objective lenses during operation in adverse conditions.

5. **IR-450 IR illuminator**

   A 450 mW infrared illuminator is powerfull for long range night vision in the total darkness.

6. **Picatinny Adapter**

   1,5" Picatinny rail for additional lighting, laser and other mission critical tools.

7. **MICH Helmet Mount Kit**

   This kit contain MICH helmet mount and adapter which allows to attach the PS-15 to the MICH helmet mount.

8. **Shoulder Strap**

9. **Universal Helmet Mount**

   Provides mount interface for the ATN PS-15 to a range of ballistic helmets.

10. **PASGT Helmet Mount Kit**

    This kit contain PASGT helmet mount and adapter which allows to attach the PS-15 to the PASGT helmet mount.

11. **Hard Shipping/Storage Case**

    A protective case used for shipping/storage of ATN PS-15 and its accessories.

SECTION III

MOUNTING PROCEDURES

3.1. MOUNTING PROCEDURES

3.1.1. MOUNTING THE ATN PS-15 TO A HEADMOUNT

To mount the ATN PS-15 to a headmount, perform the following:

1. Loosen the screw (A). Push the button (B) and insert the rail of the PS-15 into the socket (C) of the headset.
2. Place the headmount with PS-15 on your a head.
3. Loosen the screw (A) and move the unit along the rail for eye relief adjustment.
4. The PS-15 headmount has a flip-up mechanism. Push the side button (D) on the mount and lift the unit up until the unit stops in the top position. When the device reaches the top/upper position it will turn off automatically.
5. Push the same button (D) to lower PS-15 into the viewing position. The unit will automatically turn back on again for continuation of the operation.

FIGURE 3-1. ATTACHING ATN PS-15 TO HEAD MOUNT

3.1.2. MOUNTING THE ATN PS-15 TO A HELMET

Attachment of ATN PS-15 to a standard PASGT helmet. The Helmet mount fits securely onto helmet via a rugged strapping assembly and grooved hooks. With helmet mount, the PS-15 can be

positioned directly in front of the user's eyes or flipped up out of the viewing position.

1. Install the mount onto the helmet as shown on the picture.
2. Tighten and fix the straps (A)
3. Attach the goggles to the rail.
4. Loosen screw (C). Push button (B) and insert the bracket of the PS-15 into rail (D) of the helmet mount.
5. Place the helmet with PS-15 onto head.
6. Loosen the screw (C) and move the unit for proper eye relief adjustment.
7. Turn the fixation lever (E) down and move the unit along the rail for vertical position adjustment. Turn the lever up and tighten it for fixation of vertical position.
8. Push the button (F) and move the PS-15 along the slide rail for comfortable position.
9. The PS-15 helmet mount has a flip-up mechanism. Push the button (G) on the side of mount and lift the unit up until the unit gets fixed in the top position. When the device reaches the top/ upper position it will turn off automatically.
10. Push the same button (G) to lower PS-15 to viewing position. The unit will automatically turn back on again for continuation of the operation.
11. The mounting mechanism of helmet mount can be detached from headgear. Pull the knob (H) and move the mounting mechanism down along the rail.

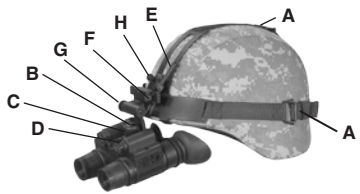

FIGURE 3-2. ATTACHING ATN PS-15 TO HELMET MOUNT

3.1.3. MOUNTING THE PICATINNY ADAPTER TO THE ATN PS-15

Mount Picatinny adapter(A) onto one of the rails on the goggles. Tighten two fixing screws(B) of the adapter.

FIGURE 3-3. MOUNTING THE PICATINNY ADAPTER TO THE ATN PS-15

3.1.4. MOUNTING IR450 TO THE ATN PS-15

IR450 may be mounted on the goggles through the Picatinny adapter.

1. Install the Picatinny Adapter on one of the goggles rails (Item 3.1.3.).
2. Loosen the IR450 fixing screw.
3. Mount the IR450 on the Picatinny Adapter and tighten the fixing screw.

FIGURE 3-4. ATN PS-15 WITH IR450

3.1.5. MOUNTING CAMERA/CAMCORDER TO THE ATN PS-15

1. Screw Camera Adapter (Figure 3-5, (A)) into the front lens of a photographic camera (thread M52x0.75) or a video camera (use adapter ring threaded M37x0.75 (Figure 3-6)).
2. Remove the rubber eyecup off one of the goggles eyepieces.
3. Connect the adapter with the eyepiece and gently tighten 3 fixing screws (Figure 3-5, (B)) on the adapter.

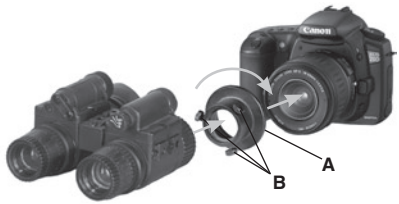

FIGURE 3-5. MOUNTING CAMERA TO THE ATN PS-15

FIGURE 3-6. MOUNTING CAMCORDER TO THE ATN PS-15

3.1.6. MOUNTING 3X LENS TO THE ATN PS-15

The 3x lenses are afocal lenses which can be screwed directly into the existing 1x front lenses of the PS15.

FIGURE 3-7. ATN PS-15 WITH 3X LENSES

3.1.7.MOUNTING THE ATN PS-15 TO MICH OR PASGT HELMET MOUNT

To mount the ATN PS-15 to a MICH or PASGT helmet mount, perform the following:

1. Loosen the screw (A) of adapter. Push the button (B) and slide the rail (C) of the PS-15 into the socket of the adapter. Push the button until the adapter will lock the alignment groove in the rail. Tighten the screw (A).

FIGURE 3-8. ATTACHING ADAPTER TO ATN PS-15

2. Align the adapter and the helmet mount. Slide the device rearwards until the alignment boss (Figure 3-9, (A)) aligns with the alignment groove (B) on the helmet mount. Push until the adapter locks into the helmet mount.

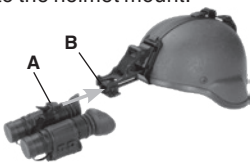

FIGURE 3-9. ATTACHING ATN PS-15 TO HELMET MOUNT

3. Adapter allows using the PS-15 with PVS head mount also.

FIGURE 3-10. ATTACHING ATN PS-15 TO PVS HEAD MOUNT

SECTION IV

OPERATING PROCEDURES

4.1. OPERATING INSTRUCTIONS

4.1.1. BATTERY INSTALLATION

CAUTION

To protect the image intensifier, keep the lens caps on the objective lenses when the goggles are not in use or when they are checked out in daylight conditions.

NOTE

At operating temperatures below –20°C (–4°F), alkaline batteries are not recommended, as operating life will be severely reduced. Lithium-iron disulfide 1.5V AA batteries or equivalent should be used below –20°C (–4°F).

TABLE 4-1. BATTERY LIFE

ESTIMATED BATTERY LIFE	
BATTERY TYPE	**USAGE**
CR123A	40 Hours (Gen. 2+) 30 Hours (Gen.3 and 4)
Standard AA	20 Hours(Gen. 2+) 15 Hours (Gen.3 and 4)

The ATN PS-15 operates with one AA battery or one CR123A battery through the application of a battery adapter.

Install CR123A battery as follows:

1. Unscrew the battery cap (A) and insert the battery (B), observing the polarity as indicated.
2. Replace the battery cap (A) and screw cap.
3. Please make sure the cap comes in assembly with the battery adapter.

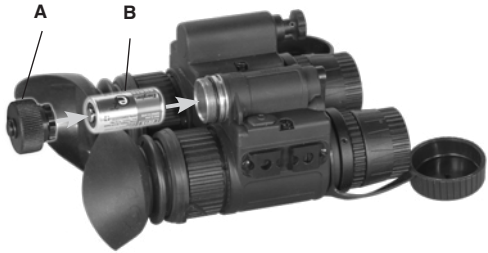

FIGURE 4-1. CR123A BATTERY INSTALLATION

Install standard AA batteries as follows:

1. Unscrew the battery cap (A).
2. Unscrew the CR123 battery adapter(B) from the cap.
3. Insert AA battery, observing the polarity as indicated.
4. Put on the battery cap and screw it hand-tight.

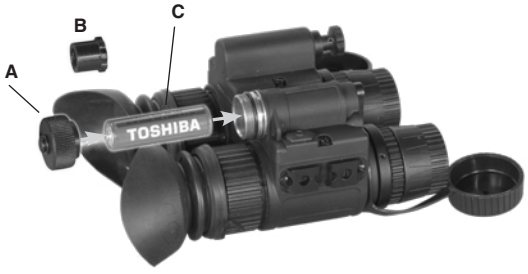

FIGURE 4-2. AA BATTERY INSTALLATION

4.1.2. MECHANICAL FUNCTIONS

The mechanical functions of the ATN PS-15 allow for variations of the physical features of individual operators and provide for operating the system. These functions include the On/Off/IR control, Automatic Protective System Off control, eye relief (see Section III Mounting Procedures – Headmount Adjustments), diopter adjustment, objective lens focus, and IR illuminator focusing. These mechanical controls are identified in Figure 4-3.

Operation knob (A) is used to switch both the goggles and the IR Illuminator on/off.

Rotate the operation knob from “OFF” position to “ON” position to turn the unit on. The protective lens covers shall be attached to the lens. Do not turn the unit on in daytime without the protective lens caps on. You should see green glow in the eyepieces. To turn the unit off, rotate the operation knob (A) from “ON” to “OFF” position.

You may adjust the unit diopters by rotating the eyepiece rings (B). The total dioptric range is covered in 1/2 revolution.

To focus the unit for different distances rotate the front lens rings (C). The total focusing range is covered in 1/3 ring revolution.

The button (D) is used for switching–out of Automatic Protective System. The green LED indicator in the eyepiece starts flickering slowly. In this case you can test the unit in the daylight with protective cups on the lens. To switching–on of Automatic Protective System push the button (D) again.

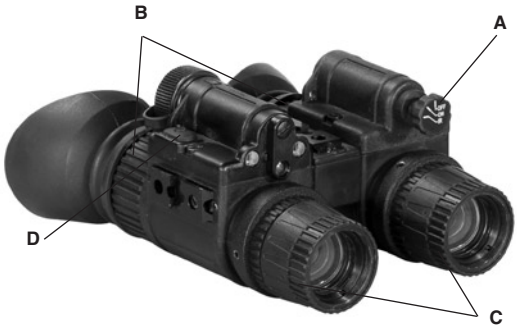

FIGURE 4-3. MECHANICAL FUNCTIONS

4.1.3. INFRARED (IR) ILLUMINATOR OPERATIONS

CAUTION

The IR illuminator is a light source that is invisible to the unaided eye made use of in the conditions of extreme darkness. Please keep in mind this illuminator functioning can be easily detected by other people who use night vision devices, too.

NOTE

The IR illuminator principally serves to let you see in the scarcely-lit surroundings at a viewing range of up to 3 meters optimally.

IR Illuminator gets activated when the operation knob is in "IR" position. A red light appears in the eyepiece to indicate that the IR illuminator is operating.

By shifting the focusing lens of the IR pivot plate (B) to cover the IR illuminator window (C) you can focus the IR into a spotting position and at a time extend the IR useful range of observation.

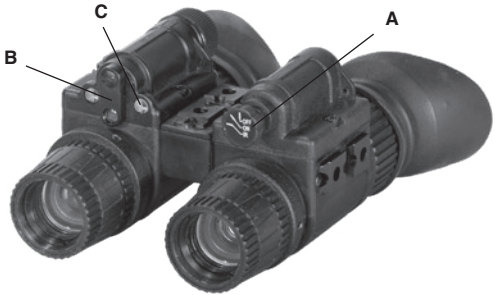

FIGURE 4-4. INFRARED (IR) ILLUMINATOR OPERATIONS

SECTION V

OPERATIONAL DEFECTS

5.1. ZEROING OPERATIONAL DEFECTS

Operational defects refer to the reliability of the image intensifiers and are an evidence of instability. Their identification shall be a valid reason to immediately refuse to accept the ATN PS-15. These include shading, edge glow, flashing, flickering, and intermittent operation.

5.1.1. SHADING

If shading is persistent, you will not see a fully circular image (Figure 5-1). Shading is very dark and you cannot see an image through it. Shading always begins on the edge and migrates inward eventually across the entire image area. Shading is a high contrast area with a distinct line of demarcation. Contact ATN or point of purchase for warranty/repair procedures.

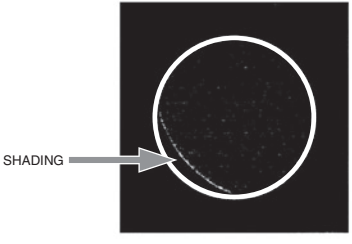

FIGURE 5-1. SHADING

NOTE

Make sure the shading is not the result of improper exit pupil position.

5.1.2. EDGE GLOW

Edge glow is a bright area (sometimes sparkling) in the outer portion of the viewing area (Figure 5-2). To check for edge glow, block out all light by cupping a hand over the lenses. If the image tubes are displaying edge glow the bright area will still show up. Contact ATN or point of purchase for warranty/repair procedures.

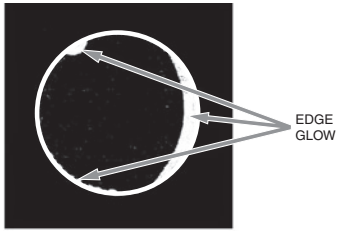

FIGURE 5-2. EDGE GLOW

5.1.3. FLASHING, FLICKERING, OR INTERMITTENT OPERATION

The image may appear to flicker or flash. If there is more than one flicker, check for loose battery adapter or weak battery. Contact ATN or point of purchase for warranty/repair procedures.

5.1.4. COSMETIC BLEMISHES

These are usually the result of manufacturing imperfections that do not affect image intensifiers reliability and are not normally a reason to claim for warranty or repair work. However, some types of blemishes can get worse over time and interfere with the usability of the device. If you believe a blemish is a cause for rejection, warranty or repair please ATN or point of purchase for warranty/repair procedures.

A. Bright Spots.

A bright spot is a small, non-uniform, bright area that may flicker or appear constant (Figure 5-3).

Not all bright spots make the ATN PS-15 rejectable. Cup your hand over the lenses to block out all light. If the bright spot remains, return the ATN PS-15. Bright spots usually go away when the light is blocked out. Make sure any bright spot is not simply a bright area in the scene you are viewing. **Bright spots are acceptable if they do not interfere with the ability to view the outside scene.**

B. Emission Points.

A steady or fluctuating pinpoint of bright light in the image area and does not go away when all light is blocked from the objective lenses of the goggles (Figure 5-3). The position of an emission point within the image area does not move. Not all emission points make the ATN PS-15 rejectable. Make sure any emission point is not simply a point light source in the sceneyou are viewing. **Emission points are acceptable if they do not interfere with the usability of the device.**

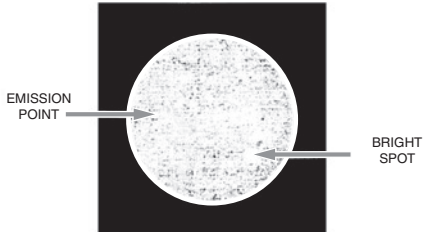

FIGURE 5-3. BRIGHT SPOTS AND EMISSION POINTS

C. Black Spots.

These are cosmetic blemishes in the image intensifiers or dirt or debris between the lenses. Black spots are acceptable as long as they do not interfere with viewing the image. **No action is required if this condition is present unless the spots interfere with the usability of the device.**

D. Fixed-Pattern Noise.

This is usually a cosmetic blemish characterized by a faint hexagonal (honeycomb) pattern throughout the viewing area that most often occurs at high light levels or when viewing very bright lights (Figure 5-4). This pattern can be seen in every image intensifier if the light level is high enough. **This condition is acceptable as long as the pattern does not interfere with viewing the image and usability of the device.**

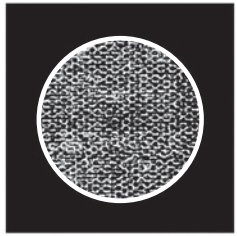

FIGURE 5-4. FIXED-PATTERN NOISE

E. Chicken Wire.

An irregular pattern of dark thin lines in the field of view either throughout the image area or in parts of the image area (Figure 5-5). Under the worst-case condition, these lines will form hexagonal or square-wave shaped lines. This is typically viewed in high light conditions. **No action is required if this condition is present unless it interferes with the viewing the image and interferes with the users usability of the device.**

FIGURE 5-5. CHICKEN WIRE

SECTION VI

MAINTENANCE

6.1. PREVENTIVE MAINTENANCE

TABLE 6.1 PREVENTIVE MAINTENANCE CHECKS AND SERVICES FOR ATN PS-15

ITEM NO.	INTERVAL	LOCATION ITEM TO CHECK/SERVICE	PROCEDURE	NOT FUNCTIONING AT OPTIMAL LEVEL IF
1.	Before	Maintenance	• Open carrying case, inventory items. • Previously recorded faults on maintenance records.	Not Current. Fault not corrected.
			Goggles	
2.	Before/After	Optical Surfaces	Inspect lenses for dirt, fingerprint residue, chips, or cracks. If necessary, clean and dry lens with water and lens tissue.	Scratches or chips hinder vision with goggles turned on, or if cracks are present.
3.	Before/After	External Surfaces	Inspect for cracks or damage. Scratches and gouges are OK if operation is not affected	Cracked or damaged.

TABLE 6.1 PREVENTIVE MAINTENANCE CHECKS AND SERVICES FOR ATN PS-15 (CONT.)

ITEM NO.	INTERVAL	LOCATION ITEM TO CHECK/SERVICE	PROCEDURE	NOT FUNCTIONING AT OPTIMAL LEVEL IF
4.	Before/After	Battery Adapter / Compartment	Check to make sure battery adapter is present. Remove battery adapter and inspect for corrosion, moisture, corroded or defective contacts, and that o-ring is present.	Adapter is missing, contacts damaged or corroded, or o-ring is missing.
5.	Before/After	Diopter Adjustment Ring	Rotate diopter adjustment ring to make sure the eyepiece is not too tight or too loose.	Binding, not moving freely or too loose.
6.	Before/After	Eyecups	Inspect for dirt, dust, and cracked or torn cups. Inspect for bent, broken or improperly fitting eyecups. If necessary, clean with water.	
7.	Before/After	Objective Lens Focus Rings	Rotate objective lenses focus rings to ensure free movement.	Binding or not moving freely.
8.	Before/After	Lens Caps	Inspect for cracked, torn, or missing lens caps.	

TABLE 6.1 PREVENTIVE MAINTENANCE CHECKS AND SERVICES FOR ATN PS-15 (CONT.)

ITEM NO.	INTERVAL	LOCATION ITEM TO CHECK/SERVICE	PROCEDURE	NOT FUNCTIONING AT OPTIMAL LEVEL IF
9.	Before/After	Viewed Image	Refer to Section V – Operation Defects – to inspect for operational defects.	Flickering, flashing, edge glow, or shading is observed.
10.	Before/After	Strap, Pads	Inspect for cuts, tears, fraying, holes, cracks, or defective fasteners.	Damage causes straps or pads to be unserviceable.
11.	Before/After	Socket	Inspect for dirt, dust, or corrosion. Insert ATN PS-15 latch into socket to verify secure attachment of ATN PS-15 to headmount. If necessary, clean socket with water.	Damaged, latch won't work or too loose.
12.	For and Aft Adjustments	Socket	Press the socket-release button and check for free motion. Inspect for damage.	Binding, damaged or non-operational slide mechanism.

TABLE 6.1 PREVENTIVE MAINTENANCE CHECKS AND SERVICES FOR ATN PS-15 (CONT.)

ITEM NO.	INTERVAL	LOCATION ITEM TO CHECK/SERVICE	PROCEDURE	NOT FUNCTIONING AT OPTIMAL LEVEL IF
13.	Before/After	Headmount / Helmet Mount Adapter	Inspect for dirt, dust, or corrosion. Insert adapter into headmount or helmet mount socket to verify secure attachment.	Damaged, will not latch securely.

CAUTION

The demist coating on the demist shield can be damaged if cleaned while wet or cleaned with wet lens paper. Clean only when the demist shield is dry and only use dry lens paper.

TABLE 6.1 PREVENTIVE MAINTENANCE CHECKS AND SERVICES FOR ATN PS-15 (CONT.)

ITEM NO.	INTERVAL	LOCATION ITEM TO CHECK/SERVICE	PROCEDURE	NOT FUNCTIONING AT OPTIMAL LEVEL IF
15.	Before/After	Demist Shields	Inspect for dirt, dust, scratches or damage. If necessary, clean when shields are dry with dry lens tissue only.	Damage or scratches hinder vision with ATN PS-15 on.
16.	Before/After	Sacrificial Windows	Inspect for dirt, dust, scratches, or damage. If necessary, clean.	Damage or scratches hinder vision with ATN PS-15 on.
17.	Before/After	3X lenses (pair)	Inspect optical surface for dirt, dust, scratches or cracks.	Damage or scratches hinder vision.
18.	Before/After	Carrying Case	Remove all items and shake out loose dirt or foreign material. Inspect for tears, cuts, excess wear or damage to mounting clips.	
19.	Before/After	Neck Cord	Inspect for cuts, tears, or excess wear or damaged clips.	

6.2. OPERATOR TROUBLESHOOTING

Table 6-2 lists common malfunctions that you may find in your equipment. Perform the tests, inspections, and corrective actions in the order they appear in the table.

This table cannot list all the malfunctions that may occur, all the tests and inspections needed to find the fault, or all the corrective actions needed to correct the fault. If the equipment malfunction is not listed or actions listed do not correct the fault, notify ATN or your point of Purchase.

TABLE 6.2 OPERATOR TROUBLESHOOTING FOR ATN PS-15

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
1. Goggles fail to activate.	Turn operation knob. Check for defective, missing or improperly installed batteries.	Turn operation knob in ON position. Replace the battery or install it in a proper way.
2. IR illuminator fails to activate.	In a dark location with system turned on, activate IR. Visually check IR illuminator operation; scene should brighten.	If IR illuminator fails to activate, refer to higher level of maintenance.
3. IR indicator fails to activate.	Visual.	Refer to higher level of maintenance.
4. Poor image quality	• Check objective lenses or eyepieces focus. • Check for fogging or dirt on lenses.	•Refocus. •Clean lenses surface. • If image quality is still poor, refer to higher level of maintenance.
5. Light visible around eyecups	• Check eye-relief distance. • Check eyecups for resiliency.	• Readjust for proper eye-relief distance. • If eyecups are defective, refer to higher level of maintenance.

TABLE 6.2 OPERATOR TROUBLESHOOTING FOR ATN PS-15 (CONT.)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
6. Diopter adjustment cannot be made	Check to see if the diopter adjustment rings are bent or broken	If damaged, refer to higher level of maintenance.
7. Battery adapter difficult to remove.	• Check for damaged battery adapter.	• If damaged, refer to higher level of maintenance.
8. Head straps cannot be tightened	Check for defective buckles, fasteners or straps.	If damaged, refer to higher level of maintenance.
9. Headmount or helmet mount socket and head/helmet mount adapter latch do not catch.	• Check socket or latch for dirt. • Check socket or latch for damage.	• Clean socket and latch. • If damaged, return both headmount or head/helmet mount adapter to higher level of maintenance.
10. Helmet mount will not tighten to helmet.	Inspect mounting hardware for damage.	If damaged, refer to higher level of maintenance.

6.3. CLEANING THE ATN PS-15

CAUTION

The ATN PS-15 is a precision optical instrument and must be handled carefully at all times to prevent damage.

Do not scratch the external lens surfaces or touch them with your fingers.

Wiping demisting shield with lens paper while wet or with wet lens paper can damage the coating.

Clean goggles with water, if necessary, and dry thoroughly. Clean lenses with lens paper (and water, if necessary, except for demisting shields).

6.4. HEADMOUNT MAINTENANCE

6.4.1. REMOVAL AND INSTALLATION OF BROWPAD

1. Remove old browpad (Figure 6-1) by grasping the headband.
2. Replace the browpad by gently pressing on the new browpad and smoothing out any wrinkles in new browpad.

FIGURE 6-1. REMOVAL AND INSTALLATION OF BROWPAD

6.4.2. REMOVAL AND INSTALLATION OF CHINSTRAP

1. Remove the chinstrap (Figure 6-2) by unsnapping the Velcro tape from the left side of the headband. Unbuckle the chinstraps from narrow strap assembly.

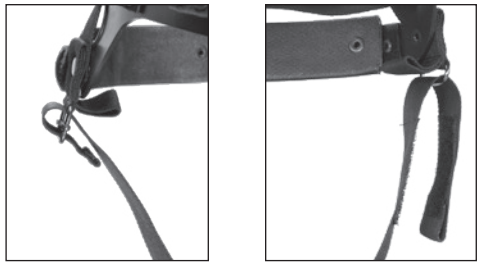

FIGURE 6-2. REMOVAL AND INSTALLATION OF CHINSTRAP

2. Replace the chinstrap by using the Velcro tape on the left side of the headband. Lace the right straps into their respective sliding bar buckles on the right side of the headband for correct lacing (Figure 6-2).

6.4.3. REMOVAL AND INSTALLATION OF CHIN CUP

1. Remove the chinstrap (Figure 6-3) by unsnapping the Velcro tape from the left side of the headband.
2. Replace the chin cup by sliding the cap on the chinstrap. Fix the Velcro tape onto the place.

FIGURE 6-3. REMOVAL AND INSTALLATION OF CHIN CUP

6.5. TUBE MAINTENANCE / REPLACEMENT

1. Unscrew the eyepiece (E) from the case of device (A).
2. Unscrew the lock ring (D) from the case of device.
3. Extract the light guide (C) from the case of device.
4. Extract the tube (B) to be replaced from the case of device (A).
5. Introduce the new tube (B) into the case of device (A).
6. Set the light guide (C) onto the place in the case.
7. Screw the lock ring (D) into the case of device.
8. Screw the eyepiece (E) into the case of device (A).

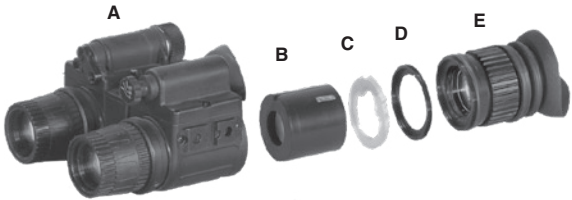

FIGURE 6-4. MAINTENANCE/REPLACEMENT OF THE TUBE IN THE PS-15

APPENDIX A

END ITEM COMPONENTS

TABLE A-1. ATN PS-15 END ITEM COMPONENTS

ITEM	DESCRIPTION
1.	ATN PS-15 Goggles Assembly (without Image Intensifier Tube)
2.	Swing Arm Interface, Head/Helmet
3.	Operator Manual
4.	Demist Shields, Eyepieces
5.	Soft Carrying Case
6.	Sacrificial Windows
7.	Should Strap
8.	Head Mount Assembly
9.	Brow Pad Assembly (Small)
10.	Brow Pad Assembly (Medium)
11.	Brow Pad Assembly (Large)
12.	Lens Caps
14.	Eye Cup Assemblies
16.	CR123A 3.0V DC Battery, Lithium
17.	Battery Adapter for CR123A
18.	Battery (AA Alkaline)

APPENDIX B

REPAIR PARTS LIST

TABLE B-1. ATN PS-15 REPAIR PARTS LIST

ITEM	DESCRIPTION	PART NO.
1	Battery Cap	NVM-138
2	Lithium Battery	CR123A
ALT	AA Alkaline Battery	M30-044
3	Purge Screw	7B315
4	Battery Adapter	NVM-198
5	Lens Caps	NVM-178
6	Sacrificial Window	NVM-032
7	Demist Shield	NVM-033
8	Battery Cap Retainer	NVM-156
9	Objective Lens Assembly	NVM-030
10	Eyepiece Lens Assembly	NVM-035
11	Head/Helmet Mount Adapter	NVM-098
12	Ship/Storage Case	7B257-2
13	Neck Cord	7B306
14	Soft Carry Case	7B262
15	Eyecup Assembly	7B422
16	Operator Manual	NVM-099
17	Shoulder Strap	7B267
18	Goggle Kit	7B268-A1
19	IR450 Kit	NVM-202
20	Picatinny Adapter	NVM-203
21	Camera Adapter	NVM-204
22	Pair of 3X Lens	NVM-299
23	Universal Helmet mount	NVM-208

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INDEX

A

ABBREVIATIONS, 1-4

B

BATTERY INSTALLATION, 4-2
BATTERY LIFE, 4-2
BLACK SPOTS, 5-5
BRIGHT SPOTS, 5-4

C

CAUTIONS, 4-2, 4-6, 6-10
CHICKEN WIRE, 5-6
CLEANING, 6-10
COSMETIC BLEMISHES, 5-3

D

DIOPTER ADJUSTMENT, 4-5, 6-3, 6-9

E

EDGE GLOW, 5-3, 6-4
EMISSION POINTS, 5-4
END ITEM COMPONENTS, A-1
EQUIPMENT LIMITATIONS, b
EYE RELIEF, 2-3
EYEPIECE DIOPTER ADJ., 2-3

F

FIXED-PATTERN NOISE, 5-5
FLASHING, FLICKERING, OR INTERMITTENT OPERATION, 5-3
F-NUMBER, 2-3

G

GENERAL INFORMATION, 1-3

H

HEIGHT, 2-3

I

IR ILLUMINATION RANGE, 2-3
IR ILLUMINATOR, a, 4-6, 6-8

L

LENGTH, 2-3

M

MAGNIFICATION, 2-3
MAINTENANCE, 6-1
MECHANICAL FUNCTIONS, 4-5
MOUNTING PROCEDURES, 3-2

O

OBJECTIVE LENS FOCUS, 4-5, 6-3
ON/OFF/ON IR CONTROL, 4-5
OPERATING INSTRUCTIONS, 4-2
OPERATIONAL DEFECTS, 5-2, 6-4
OPERATOR TROUBLESHOOTING, 6-7

P

POWER REQUIREMENTS, 2-3

R

REPAIR PARTS, B-1

S

SAFETY SUMMARY, a
SHADING, 5-2, 6-4
SYSTEM DESCRIPTION, 2-2

T

TECHNICAL INFORMATION, 1-4

V

VOLTAGE, 2-3

W

WARRANTY INFORMATION, 1-4
WEIGHT, 2-3
WIDTH, 2-3

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